

## REMARKS

Receipt of the Office Action of January 15, 2010 is gratefully acknowledged.

Claims 11 and 13 - 20 have been reexamined and finally rejected as follows: claims 11, 14 - 16, 18 and 20 under 35 USC 102(b) by Frey et al; and claims 13, 17 and 19 under 35 USC 103(a) by Frey et al in view of Schmooch.

After carefully considering each of the examiner's noted rejections, applicant has decided to combine the subject matter of claims 14 and 18 into claim 11 and the amend claim 20 to include changes which parallel the change to claim 11, although in method format. As such, claims 11, 13, 15 - 17, 19 and 20 should be entered and allowed as the claims as now amended patentably distinguish over Frey et al and Schmooch, individually or in combination

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Frey et al discloses a magneto-inductive flow sensor for a fluid flowing in a pipeline. Frey et al includes: a measuring tube for conveying the fluid; a magnetic circuit arrangement arranged at said measuring tube for producing and guiding a magnetic field, which induces an electric field in the flowing fluid; and measuring electrodes for tapping a voltage from the electric field. The measuring tube includes a carrier tube and a liner, especially a tubular liner, of insulating material accommodated in a lumen of the carrier tube. The carrier tube has a first widening formed terminally into a inlet-side first end of said measuring tube and a second widening formed into a outlet-side second end of said measuring tube. The measuring tube includes, an open-pored support skeleton embedded in the liner for stabilizing the liner.

Frey et al does not disclose at least one groove formed in a wall of the carrier tube, which is open toward the lumen of the carrier tube, wherein the at least one groove is embodied as an annular groove extending essentially coaxially with the wall of the carrier tube. Also, Frey et al does not disclose at least one groove located between the first end of the measuring tube and the second end of the measuring tube and spaced apart from the first widening and spaced apart from the second widening. Also missing is any disclosure of the at least one groove, being at least partially filled by a material, especially a sintered material, of a support skeleton, directly sintered in the carrier tube, such that the support skeleton is connected by shape interlocking with the carrier tube. Frey et al does not disclose a ridge formed on the support skeleton corresponding to the one groove, with the ridge being comprised, at least in part, of the material of the support skeleton, and such that it extends into the one groove. Finally, Frey et al does not disclose that the strength loss temperature of the carrier tube is greater than the strength loss temperature of the support skeleton.

Because claim 11 as amended recites the noted limitations, which are not found in Frey et al, claim 11 as amended patentably distinguishes over Frey et al.

The expanded portions 111 and 112 in Frey et al may be equated to the "widening" in the present invention, but they are not equal to the "groove" as claimed. The best that can be said is that they are depressions, but not a groove. To view them as such is error.

Groove and widening are defined as different parts and "said at least one groove is located in between said first end of said measuring tube and said second end of said measuring tube and spaced apart from said first widening and spaced apart from said second widening". Frey et al does not disclose a separate groove besides the widening. The groove disclosed in the present

invention is spaced apart from the widening and thus spaced apart from the inlet and outlet of the measuring tube, as well.

A function of the groove and the ridge extending into the groove is to connect the support skeleton by shape-interlocking with the carrier tube.

Indeed, Frey et al discloses in paragraph [156] that "during sintering, both expanded portions 111, 112 are filled, at least in part, with material to be sintered, so that the sintered reinforcing body 13 and the support tube 11 are additionally secured in place, see FIG. 3c", but both of the expanded portions of the support tube form a shape-interlocking connection with the reinforcing body. Each individual expanded portion works as a stopper with a function to stop a movement of the reinforcing body in one direction parallel to an axis of the tube inside the tube. In contrast the ridge extending into the groove constitutes a shape-interlocking connection.

Additionally is "said at least one groove [...] embodied as an annular groove extending essentially coaxially with the wall of said carrier tube". Frey (US 2003/0213119 A1) discloses in paragraph [0172] "The filling of the wall openings 113, 114 is done in such a manner, for example, that the reinforcing body 13 rests laterally against the wall openings 113, 114 and is thus additionally secured in position". But the wall openings 113 and 114 are neither "grooves formed in a wall of said carrier tube", nor "annular groove extending essentially coaxially with the wall of said carrier tube". The technical function of the wall openings differs from the technical function of the groove; otherwise the groove would be useless.

Schmoock does not disclose "an annular groove extending essentially coaxially with the wall of said carrier tube", as well. Schmoock shows elongate grooves being parallel to an axis of a tube.

"The molded plastic electrode which has a square formation and a concave face is provided with a metal insert" [Schmook, column 4, lines 45-53]. There are differences in fixing a solid metal insert to an elastic and flexible material with a concave face and in fixing a sintered material circumferential onto the inner walls of a tube.

Hence, a completely different intention form the basis of the different solution of Schmook and claim 11 as amended is inventive over Frey in view of Schmook.


Claim 20 has been amended to parallel the changes made to claim 11, only they have been cast in method format. As such, claim 20 should also be allowed.

A copy of the IDS filed on June 12, 2006 is being submitted herewith along with the references cited.

Entry of the above noted amendments is respectfully requested and claims 11, 13, 15 - 17, 19 and 20 allowed. Alternatively, entry of the above noted amendments for purposes of appeal is respectfully requested.

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